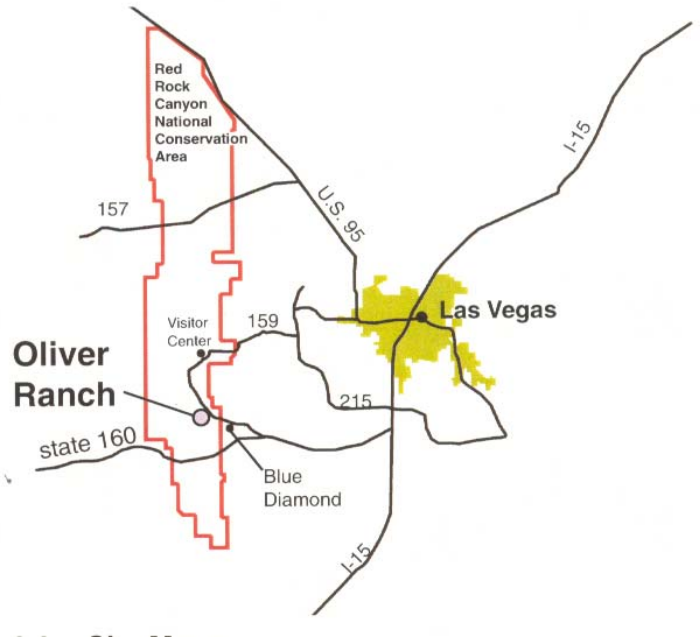
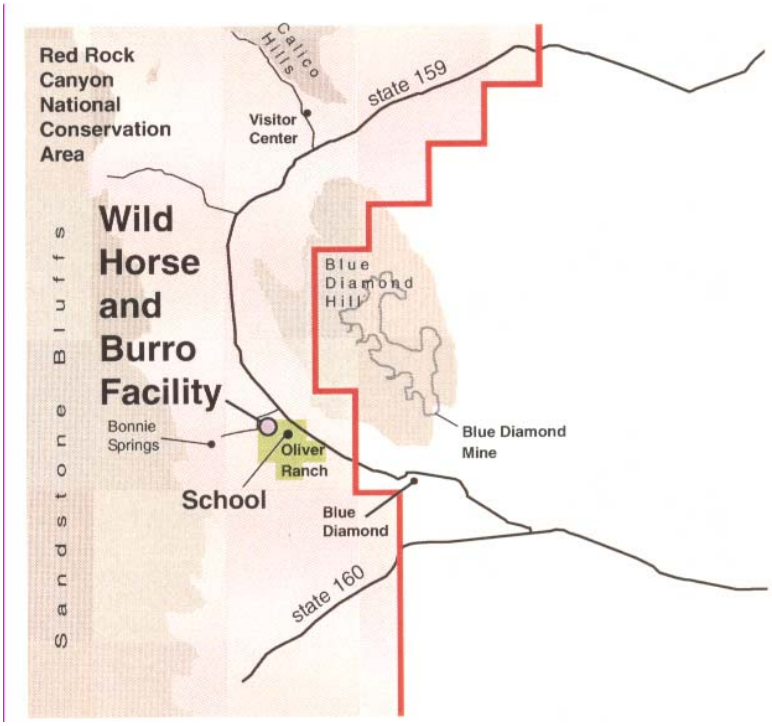
3.0 Site

3.1 Location Map



3.2 Site Map



3.0 Site

3.3 Context

When asked how she would describe the Red Rock Canyon National Conservation Area, the location of the new Oliver Ranch Science School, the person paused for only an instant before responding " in this place my soul dives into the earth and in a sort of swirling way reaches to the stars."

Oliver Ranch School will be constructed within a 300 acre parcel known as Oliver Ranch. The site is located on the eastern edge of the Red Rock Canyon National Conservation Area off of Highway 159, south of Bonnie Springs Road.

The surrounding community of Las Vegas is the most rapidly growing area in the United States. Between 60,000 and 90,000 people are moving into this area each year. Many have diverse backgrounds, experiences, and knowledge, but few understand what it is to live in the desert. The Mojave Desert is a delicate and fragile place. Extremes of aridity and heat exaggerate the duration of recovery from man's disturbance. Educating this growing population on respectful living in the desert is a priority.

Over seven million acres of public land, including 8 congressionally dedicated national assets, managed by four federal land management agencies establishes a situation unique to Southern Nevada. A collaborative partnership among these federal agencies, and various state agencies established a management strategy that transcends bureaucratic and mapping boundaries, allowing broader issues to be addressed. This partnership facilitated the development of a new approach; a fresh opinion of the whole being greater than its parts. This team examined the whole and identified major issues to address, with education programs being a key component to resolving a lack of public understanding, awareness, pride, and stewardship for these lands.

The Oliver Ranch School is not a venue to educate on all aspects of the environment, but instead it is one among many opportunities in proximity to Las Vegas that can each offer a portion of an entire environmental education curriculum. A diverse variety of wonderful natural assets within and surrounding the community of Las Vegas offer the foundation to build a portfolio of experiential education programs. Developing programs, in conjunction with the Oliver Ranch School at Red Rock Canyon National Conservation Area, like "Forever Earth" and "W.O.W." at Lake Mead National Recreation Area, Big Spring Preserve, Las Vegas Wetlands Park, and future programs at Sloan Canyon National Conservation Area, Spring Mountain National Forest, Desert National Wildlife Range, Valley of Fire State Park, Walking Box Ranch, and Mojave National

3.0 Site

Preserve will form this experiential education portfolio to build pride in sense of place, develop a respect for the environment, and create an awareness of an individual's impact on the health of the environment.

Oliver Ranch offers a complete package of education opportunities to complement this overall portfolio scattered within and around the Las Vegas Valley. As identified in the BLM's Proposed General Management Plan, the site is to be developed as an environmental training center and offers a unique opportunity for outdoor learning activities. Areas previously disturbed by decades of use can be used for most of the new Oliver Ranch School structures, while undisturbed natural areas become an outdoor laboratory for this outdoor discovery program.

The Oliver Ranch site fulfills a desire for this rare education experience to occur in a place of great natural beauty. Awesome and inspiring, its setting will enhance and expand the learning experience. Biological diversity, geological exaggeration and expression, conditional adaptability of species, extreme aridity contradicting localized areas of abundant water, and climatic extremes of heat and cold all combine in this one setting to complement learning about the environment.

3.0 Site

3.4 Goals and Objectives

Goals were developed as a result of workshop input. Many goals are applicable to various aspects of the project including the site, the facility, sustainability concepts, the educational curriculum, and overriding themes such as conservation. The following list represents goals applicable most specifically to the site.

Goal: Respect the site … Fit the site
Touch the site with minimal structural/visual impact … the building need not spoil the view … Strive for acoustical control (feeling of immersed in environment, quiet) … respect & honor the environment (compliments spirit of place) … harmony with the environment

Goal: Maximize new development in areas previously disturbed by man's use
Minimal new site disturbance … develop in areas previously disturbed

Goal: Use the site sustainably
Put things together in a sustainable way that does not degrade the site … Number of users limited by ability of environment to support

Goal: Transfer knowledge gained from the site back out to the community
Transfer knowledge from this site back out to the community … Educate about appropriate living in the desert

Goal: Use the site for the learning setting
Use the outdoor environment as spaces for learning …Use outdoor rooms and labs … Bring the outside in

Goal: Use the site for learning
Learn from the site … listen to the site … analyze what the site can support … establish what appropriate activities for the site are … environmental education based on living in a desert …To encourage participation in outdoor recreational /environmental activities … how the environment affects peoples daily life

Goal: Site utilization and development as form of education
The architecture, and operations of school buildings themselves, will be examples of sustainability and desert adaptation (This includes approach to site use and selection) … use the design approach to the site as another form of education demonstrate another way of building … Orient the building to take advantage of shade … Fit into the environment … Shade structures could represent different desert homes (burrow, native structure, nest, etc.) … to serve as a place for longer term (multiple day)

immersion experiences in learning about the Mojave desert … venue for helping to carry out BLM's mission statement

Goal: Reduce dependence on energy resources
Reduce or eliminate dependence on nonrenewable energy resources[9]

Goal: Use the site to promote flexibility to deal with varying weather conditions
Structures inspired by natural adaptations to the desert

Goal: Use native plant species only for landscaping.
Only native species used in landscaping of site

Goal: Learn from the site and apply this knowledge to new development
Structures inspired by natural adaptations to the desert …
Shade structures could represent different desert homes (burrow, native structure, nest, etc.) … a place for learning and research to aid in preserving the NCA environment

Goal: Assess the impact of activities on the site and adapt to what the site can support.
Minimize environmental impact … respect and honor the environment … fit into environment … Users limited by ability of environment to support … keeping the environment healthy for their children/grandchildren

Goal: Be a good neighborhood
Have a strong partnership with the adjacent Blue Diamond Community … preserving the values of the 'neighborhood' – both the built environment and natural environment … Interface well and bring a positive influence to others in the neighborhood … Don't adversely affect the missions, business, or well-being of the neighbors to the site

[9] *Per BLM – 6/19/2004*

3.0 Site

3.5 General Overview

Seen and unseen aspects of the site that will be researched, analyzed, and assessed in a comprehensive site analysis to be completed later include;

Climate:
Sun … Wind …Rain … Hydrology (run-off, springs, drainages, erosion)

Water:
Water rights … Existing well …Test wells … Aquifer … Movement of water through the aquifer … Perched aquifer … Water quality … Drainage

Life:
Vegetation … Plant communities … Non-native plants … Animals … Wild horses and burros

Noise:
Noise impact from highway … Noise impact from neighbors … Noise impact on neighbors … Airplanes … Periods and duration of noise impacts … Special events impact (concerts at Spring Mountain Ranch State Park, Rodeos at Bonnie Springs)

Archeology, history, and culture:
Native people …Immigrants along the Old Spanish Trail … Ranchers … Land Owners

Pedestrian/vehicular circulation:
Highway circulation … Traffic safety … Noise …Impact on site … Safety

Soils:
Structural integrity … Sandy … Micro-biotic crust … Dust creation and impact

3.0 Site

Views:
Views from the site (broad, large scale, and intimate) … Views onto the site (broad, large scale, and intimate) … Views through the site … Seasonal impact on views (summer foliage compared to lack of foliage in winter) …Impact on highway … Impact on neighbors …

Neighbors:
Blue Diamond … Blue Diamond Hill and Mine … Bonnie Springs…Spring Mountain Ranch State Park … Wild Horse and Burro Facility … RRCNCA Visitor Center … RRCNCA as a whole

Utilities:
Electricity … Water ... Sewer … Greywater … Gas … Telephone … Data … Satellite … Energy alternatives (solar/photovoltaic, passive solar, wind, geothermal)

3.6 Teaching Venues

The Curriculum Committee will produce a comprehensive program for teaching venues at the Oliver Ranch School, including site related education experiences. Ideas generated during programming workshops identified numerous venues that Oliver Ranch offers and include the following:

Demonstrate appropriate desert living strategies by the siting, design, materials, and orientation of facility:
Wind - maximize orientation to capture and use prevailing breezes and shelter from discomforting wind … Sun - capture warming sun in the winter and shelter from heat and sun in summer

Celebrate water in the desert:
Rain and snow …Dew and humidity … Springs … Subsurface water … awareness of seasonal change

Water and hydrology:
Run-off … Springs … Drainages … Surface drainage … Erosion
Study the impact of the school's water usage on the water available at the springs and in the aquifer by tracking the water production from the existing well and the new test wells …Movement of water through the aquifer … The general direction and flow of rainwater and snowmelt through the aquifer…evidence of perched aquifers … drought and its impact on springs and the aquifer … Greywater reuse … Long term

record keeping of water … Long term record keeping and analysis of climatic trends

Archeology, Cultural, and History
Native people and their use of the site … Peoples drawn to water … Related to flora and fauna … Related to its location in the whole – a place where people pass through or a place where people stop because of what the site has to offer … Immigrants along the Old Spanish Trail … Ranchers … Timeline

Vegetation:
Adaptability to climatic extremes … Plant communities … Long term record keeping … Native plants as part of human/animal diet

Animals:
Adaptability to climatic extremes … Wild horses and Burros

Geology:
Site specific features … Soils … Micro-biotic crust … broad views of geology (Wilson Cliffs, Blue Diamond Hill, Spring Mountains, La Madre Range, and the Keystone Thrust Fault)

Astronomy:
Night sky … interpretations by different peoples/cultures … Meteorological observations